# Differences Between Students Who Were and Were Not Retained in Grade

GED Testing Service Research Studies, 2007-3

General Educational Development Testing Service of the American Council on Education



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# Differences Between Students Who Were and Were Not Retained in Grade: A Comparison of Academic Achievement, Reasons For Dropping Out, and Reasons For Pursuing a GED® Credential

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Paper presented at the annual conference of the American Educational Research Association (AERA) held from April 9 to 15, 2007, in Chicago, IL.

## About the Tests of General Educational Development

The Tests of General Educational Development (GED® Tests, American Council on Education, 2002) is a battery of tests designed "to certify a high school level of academic knowledge and skills" (American Council on Education, 2006, p. 1). The GED Tests consist of five tests in the following content areas: Language Arts, Writing; Social Studies; Science; Language Arts, Reading; and Mathematics. The 2002 Series GED Tests provide adults who did not complete a formal high school program the opportunity to certify their attainment of high school-level academic knowledge and skills at a level that surpasses that of 40% of traditional graduating high school seniors. Passing the GED Tests battery (five content area tests) and obtaining a state's high school credential or diploma promotes access to further education, better jobs, and the achievement of personal goals. Since 2002, 600,000 to 700,000 candidates have taken the GED Tests each year; approximately 70% earn their state's high school credentials or diploma by passing the GED Tests and meeting the eligibility requirements set by their state, territory, or province.

GED Test results are reported as standard scores and percentile ranks. The normalized standard score scale for U.S. editions of the GED Tests in this report is based on the performance of U.S. graduating high school seniors in the 2001 norm group. The scale ranges from a minimum of 200 to a maximum of 800, has a mean of 500, and a standard deviation of 100. Half of the seniors earn standard scores above 500 and half earn scores at or below 500; about two-thirds of all U.S. graduating high school seniors earn standard scores between 400 and 600, and standard scores lower than 300 or higher than 700 are earned by approximately 2% of graduating high school seniors.

Each state, province, territory, and insular area establishes its own eligibility and minimum score requirements for issuance of a high school credential based on passing the GED Tests. However, the American Council on Education (ACE), the parent organization of GED Testing Service (GEDTS), requires that passing score requirements be set at a minimum battery total standard score of 2,250 (corresponding to an average of at least 450) and a minimum standard score of 410 on each of the five tests in the battery. This requirement, which took effect January 1, 2002, represents the reasoned judgment by ACE that passing score requirements should be neither so high as to represent levels of achievement far above that demonstrated by recent high school graduates (and, as such, arbitrarily unfair to adult candidates) nor so low as to threaten the credibility of the GED credential. It is estimated that 60% of graduating high school seniors could pass the GED Tests battery on their first attempt.

## Study Purpose

This study examines the demographic, academic, social, and behavioral differences between GED candidates who were and were not retained in grade. Differences between candidates who were and were not retained in grade are examined with regard to factors such as demographics, delinquent behaviors, reasons for dropping out of high school, and reasons for seeking a GED credential. Additional analyses explore the effect of grade retention on performance on each of the GED Tests as well as on passing the entire GED Tests battery. Data used in this study are taken from the population of GED Tests candidates in 2003 and 2004 in the United States who immediately pursued their GED credential after dropping out of high school.

Grade promotion policies regarding low-performing students in grade schools have been increasingly under strict scrutiny and contentious debate with regard to these policies' effect on achievement, self-esteem, and the likelihood of students' dropping out of school. In an examination of the differences between students who were and were not retained in grade and who immediately pursued a GED credential after dropping out of high school, this study analyzed the following:

1. statistics on demographics such as gender, race/ethnicity, education, employment status, and income for GED candidates who were and were not retained in grade;
2. percentages of GED candidates who were and were not retained in grade who indicated each of 43 self-reported reasons for not completing high school (these included family-, social-, academic environment-, and student performance–related reasons);
3. percentages of GED candidates who were and were not retained in grade who indicated each of 17 self-reported reasons for pursuing a GED credential (these included educational-, employment-, social-, military-, and personal-related reasons); and
4. performance on the GED Tests for candidates who were and were not retained in grade, both in terms of standard scores and pass rates for individual tests and the test battery, and how test performance relates to time spent preparing for the GED Tests.

## Method

### *Data Source*

The data came from the GED Testing Service's International Database (IDB), a centralized international database for candidates' demographic and test data collected from Official GED® Electronic Scoring Sites. During the 2003 an 2004 examination cycles, over 1.27 million people took the GED tests worldwide. The data file retrieved from the database contained an estimated 78% of all candidates' demographic and test data from GED Tests administrations (records included U.S. candidates, English print tests, valid test forms, no accommodations, and candidate agreement to use of data for research purpose). It should be noted that data available from Connecticut, Indiana, Ohio, and Wisconsin represented less than 60% of the actual population tested in those states.

### *Sample Selection*

In order to obtain results representative of a cohort, the study focused on candidates who showed evidence of either being or not being retained in grade and immediately pursued their GED credential after dropping out of high school. To obtain the sample of recent dropouts retained in grade, data were extracted based on (a) the candidate indicating he or she last attended traditional K-12 school in the year 2003 or 2004, and (b) calculations figured on date of birth, year the candidate last attended traditional K-12 school, and highest grade completed indicated that the candidate would have spent at least one more year in the school system than the highest grade he or she completed. Data from Georgia, North Carolina, Washington, Vermont, and Wyoming were withdrawn from the final dataset due to reporting errors in candidates' highest education level. Thus, the useable data was distributed over 45 states and the District of Columbia. The resulting number of records was 148,461.

The GEDTS collects information on individual GED Tests examinees using a demographic survey form which is distributed to the examinees during the process of pre-registration. This survey does not specifically ask the examinee if he or she has ever been retained. Instead, the survey collects such information on the examinee's date of birth, highest grades completed, and the last year he or she attended school (year of dropping out), which will serve as a proxy to estimate an examinee's years of retention in grade.

A "Retention Index" (RI), which estimates the number of years of retention, was created as follows:

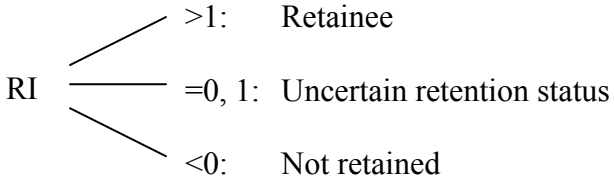
RI = Year last attended school – year of birth – highest grade completed – 7

This formula was based on the assumption that a student started first grade at the age of seven and dropped out of school in the same calendar year that he or she completed his or her highest grade. In this case, RI equals the number of years of retention if the student had ever been retained.

The real number of years of retention also depends on these two factors: (a) the student's age when he enters school, and (b) the time of the year when he drops out. Because accurate information on these two variables was not available, a best estimate of the true years of retention was calculated. Most students start first grade at either six or seven years of age; so, a RI of zero may indicate that the student started first grade at the age of seven and had never been retained in grade or the student started at the age of six and was retained by one year. Thus a zero RI did not necessarily mean that a student had never been retained.

The timing of dropping out is also important in calculating the years of retention. Theoretically a student can drop out of school any time during a year. Assume Student A started first grade at the age of seven and had never been retained before he finally dropped out, say, after he finished Grade X. If he dropped out in the fall of the new school year, he would have a RI of 0 by the above formula. However, assume another student, Student B, started at the same age and moved up as Student A did, but dropped out in the coming spring (before the end of the new school year). Student B would have completed the same grade X, but since he dropped out one calendar year later, he would have a RI of 1. Thus, a RI of 1 might have resulted from the fact that the student dropped out in spring although he completed the same highest grade as students who dropped out in the fall in the prior calendar year, not necessarily because he had been retained for one year.

Taking these two factors into consideration, we define, with a higher level of confidence, those candidates with a RI larger than 1 as retainees, those with a RI below 0 as nonretainees, and those with a RI of 0 or 1 as a group with uncertain retention status based on the information available. That is,



Because the study's focus was on the recent dropouts who took the GED Tests immediately after dropping out of school, those who answered "2003" or "2004" to the question "What year did you last attend traditional K-12 school?" were selected. This resulted in 148,461 GED candidates from the database of all GED candidates in 2003 and 2004.

Based on the RI of each candidate, 17,097 GED candidates (11.5%) were classified as retainees, 29,593 candidates as nonretainees, and the remaining 101,771 candidates were of uncertain retention status. According to previous studies (Bali, Anagnostopoulos, & Roberts, 2005), retention rate may range from slightly lower than 5% to higher than 10% depending on grade levels; however, the retention rates among dropouts may be higher. Thus the classification of the retained population is not unjustified.

*Measures*

The study utilized test data obtained from the GED Tests, a battery of tests designed "to measure academic achievement in a four-year program of high school education in the core content areas of U.S. and Canadian high school curricula". The GED Tests consist of five tests in the following content areas, Language Arts; Writing; Social Studies; Science; Language Arts, Reading; and Mathematics. Except for the Language Arts, Reading Test, all of the tests used in this study consisted of 50 multiple-choice items. The Language Arts, Reading Tests each consist of 40 items. The Language Arts, Writing and Reading Tests are structured around reading passages with related sets of items. Part of the Science and Social Studies Tests are also passage-based. Standard scores are reported on a scale of 200 to 800 with a mean of 500 and standard deviation of 100.

## Results

*Demographics of GED® Candidates Who Were and Were Not Retained in Grade*

Table 1 lists the gender, ethnicity, and the highest grade completed by candidates' retention status. Among the retainees, 70% are male (vs. 55% of nonretainees and 62% of the uncertain group); 18% are Hispanic and 21% are black (vs. 15% and 14% of the nonretainees). These statistics are consistent with the studies that have found male and Black or Hispanic students are more likely to be retained (Alexander, Entwistle, & Dauber, 2003; Bali et al., 2005; Bianchi, 1984; Corman, 2003). In addition, of the retainees who dropped out in 2003 or 2004 and immediately took the GED Tests, only 17% had completed 11th grade and above, in contrast to 67% of the nonretainees and 47% of the uncertain group. In most cases, the statistics regarding the group of uncertain retention status are of a value in between those of the retainees and nonretainees, but closer to that of the nonretainees, which makes sense given this "uncertain status" group could contain more nonretainees, because retainees are usually a smaller proportion of the student body.

The U.S. Demographics survey asks GED candidates about their status (e.g., employment) at the time of testing. Candidates are allowed to choose multiple answers. Table 2 presents the status of the GED candidates who recently dropped out of school and indicated at least one applicable status in the survey. According to Table 2, the retainees were less likely than the nonretainees to be employed either part-time (15% vs. 21%) or full-time (17% vs. 19%).

Table 1
Demographic Characteristics of GED® Candidates by Retention Status

| Characteristic | Retainees (N=17,097) | Nonretainees (N=29,593) | Uncertain (N=101,771) |
|---|---|---|---|
| Gender | | | |
| Female | 29.3 | 44.3 | 37.3 |
| Male | 70.1 | 55.3 | 62.1 |
| Missing | 0.6 | 0.4 | 0.6 |
| Race/Ethnicity | | | |
| Hispanic origin or descent | 17.5 | 15.4 | 14.3 |
| American Indian or Alaska Native | 3.0 | 2.3 | 2.4 |
| Asian | 1.4 | 2.0 | 1.6 |
| Black, African American, African Descent | 20.9 | 14.0 | 14.9 |
| Native Hawaiian or Pacific Islander | 0.4 | 0.9 | 0.7 |
| White | 53.5 | 62.0 | 62.9 |
| Missing | 3.3 | 3.4 | 3.2 |
| Primary language | | | |
| English | 92.3 | 91.4 | 93.3 |
| French | 0.2 | 0.1 | 0.1 |
| Spanish | 2.5 | 2.4 | 1.8 |
| Other | 1.0 | 1.2 | 0.9 |
| Missing | 4.0 | 4.9 | 3.9 |
| Highest education level (Grade) | | | |
| 5 | 0.1 | - | - |
| 6 | 0.6 | - | - |
| 7 | 2.8 | 0 | 0.1 |
| 8 | 24.2 | 0 | 3.2 |
| 9 | 32.8 | 2.3 | 16.7 |
| 10 | 21.9 | 22.3 | 33.1 |
| 11 | 16.7 | 49.5 | 43.4 |
| 12 | 0.7 | 17.5 | 3.6 |

However, 28% of the retainees indicated that they were full-time students when taking GED Tests vs. 22% of the nonretainees and 20% of the uncertain group. A higher percentage of the retainees (16%) indicated that they were in a correctional facility when taking the tests, compared to only 8% of the nonretainees and 9% of the uncertain group. In addition, higher percentages of retainees compared to nonretainees and the uncertain group reported that they were receiving public assistance or were single parents at the time of testing.

When asked about the total amount earned in the year prior to testing, overall, more than 65% of the GED candidates in the whole sample earned less than $3,000 annually before taking

the GED® Tests (Table 3). However, a higher percentage of retainees reported zero income (38% vs. 33% of nonretainees and 32% of the uncertain group).

Table 2
GED® Candidate Status at Time of Testing by Retention Status

| Status at time of testing | Retainees (N=15,997) % | Nonretainees (N=27,148) % | Uncertain (N=95,344) % |
|---|---|---|---|
| Employment/student status | | | |
| Employed part-time | 14.8 | 21.4 | 19.2 |
| Employed full time | 16.7 | 18.8 | 20.4 |
| Unemployed | 37.4 | 37.0 | 38.9 |
| Permanent disability | 0.3 | 0.2 | 0.2 |
| Unemployed by choice | 5.5 | 5.1 | 5.2 |
| Homemaker, family caregiver | 1.3 | 1.2 | 1.1 |
| Retired | 0.1 | 0.1 | 0.1 |
| Full-time student | 28.3 | 21.8 | 19.8 |
| Part-time student | 9.7 | 11.0 | 9.4 |
| Other status | | | |
| Correctional facility | 15.7 | 8.0 | 8.5 |
| Health facility | 1.1 | 0.6 | 0.7 |
| Receiving public assistance | 5.7 | 3.6 | 4.1 |
| Single parent | 7.7 | 5.7 | 6.0 |
| Emancipated minor | 5.8 | 9.0 | 7.2 |

Table 3
GED® Candidate Annual Income in the Year Before Testing by Retention Status

| Income | Retainees (N=17,097) % | Nonretainees (N=29,593) % | Uncertain (N=101,771) % |
|---|---|---|---|
| 0 | 37.5 | 32.5 | 31.7 |
| $1-$3,000 | 31.7 | 33.3 | 34.5 |
| $3,001-$5,000 | 6.8 | 7.7 | 8.6 |
| $5,001-$7,500 | 3.7 | 3.8 | 4.5 |
| $7,501-$10,000 | 2.8 | 2.5 | 3.2 |
| $10,001-$15,000 | 2.4 | 1.8 | 2.3 |
| $15,001-$20,000 | 1.0 | 0.6 | 0.9 |
| $20,001-$25,000 | 0.6 | 0.4 | 0.4 |
| $25,001-$30,000 | 0.2 | 0.2 | 0.2 |
| $30,001-$40,000 | 0.1 | 0.1 | 0.1 |
| More than $40,000 | 0.1 | 0.1 | 0.1 |
| Missing | 0.1 | 0.1 | 0.1 |

Table 4 lists the number and percentage of retainees by the jurisdictions where the candidates would obtain the GED® credential if they passed the tests. It should be noted that data from Connecticut, Indiana, Ohio, and Wisconsin were incomplete, and data from Vermont, Georgia, North Carolina, Washington, and Wyoming were not included due to errors in reporting data. The percentage of retainees among all recent dropouts included in this study varied from 4% in Hawaii to 19% in Mississippi and 23% in Delaware. In addition, the variations in retention rates may have been influenced by grade promotion or retention policies established in each individual jurisdiction.

*Reasons for Not Completing High School and Taking the GED® Tests*

The U.S. Demographics survey asks GED candidates in the about their reasons for not completing high school. They can select multiple reasons from a compilation of 43 choices, including social, academic, and personal reasons. Altogether, 84% (N=125,178) of our sample of recent dropouts who took the GED Tests in 2003 or 2004 picked at least one reason that explained why they dropped out of school. Table 5 shows the most frequently reported reasons across all the different groups of retention status: "Did not like school" (more than 48%), "Was bored" (more than 42%), "Had trouble with math" (more than 28%), "Poor grades" (more than 28%), "Poor study habits" (more than 34%), "Was absent too many times" (more than 46%), and "Was not happy in school" (more than 37%). Within these most popular reasons, a higher percentage of retainees vs. other groups reported that they had trouble with math, poor grades, poor study habits, and were absent too many times, indicating the retainees were more likely to have dropped out of school due to academic or behavioral problems. Equal or higher percentages of nonretainees vs. other groups indicated they were unhappy about their school environment (e.g., "did not like school", "was bored", or "was not happy in school"). Another important factor that contributed to candidates' dropping out, on which the retainees and nonretainees differed dramatically, is that almost 40% of the retainees reported that they were "too old" for their grade, while only 5% of the nonretainees reported so. This reinforces the numerous studies (Alexander et al., 2003; Jimerson, Anderson, & Whipple, 2002; Mantzicopoulos & Morrison, 1992; Shepard, Smith, & Marion, 1996) showing that retention is an important factor leading to a student's decision to drop out.

Each GED candidate is also asked to select the reason(s) for taking the GED Tests. Table 6 presents the responses from candidates in the sample by their retention status. More than 97% (N=144,822) of the whole sample indicated at least one reason for taking the GED Tests. Like the reasons for not completing high school, reasons for taking the GED Tests vary across retention status. More retainees tested for employment reasons (47% vs. 36%); while more nonretainees tested for educational reasons (64% vs. 61%). Among the candidates who reported educational reasons for taking the GED Tests, 21% of the retainees indicated that they were planning to enroll in technical or trade programs vs. 15% of the nonretainees and 17% of the uncertain retention status group. Conversely, a greater percentage of the nonretainees than retainees reported testing in order to enter two-year (31% vs. 28%) and four-year colleges (28% vs. 22%). Among employment reasons, 14% of the retainees reported they took the GED Tests to get their first job, and 33% reported to get a better job. In contrast, only 11% and 25% of the nonretainees, respectively, indicated such reasons. Furthermore, 17% of the retainees reported they took the GED Tests to be a role model for family and 48% reported for personal satisfaction vs. 12% and 41% of the nonretainees, respectively, who reported such reasons. These data

Table 4

Number and Percentage of Retainees by Credentialing Jurisdiction

| Credentialing Jurisdiction | Recent Dropouts Who Took GED® Tests (N) | Retainees (N) | Retainees (%) |
|---|---|---|---|
| AK | 1,075 | 113 | 10.5 |
| AL | 5,955 | 579 | 9.7 |
| AR | 3,717 | 314 | 8.4 |
| AZ | 3,354 | 355 | 10.6 |
| CA | 9,612 | 582 | 6.1 |
| CO | 4,054 | 384 | 9.5 |
| DC | 229 | 38 | 16.6 |
| DE | 82 | 19 | 23.2 |
| FL | 14,852 | 1,668 | 11.2 |
| HI | 782 | 32 | 4.1 |
| IA | 1,012 | 116 | 11.5 |
| ID | 1,925 | 113 | 5.9 |
| IL | 3,498 | 305 | 8.7 |
| IN* | 48 | 4 | 8.3 |
| KS | 1,753 | 125 | 7.1 |
| KY | 3,572 | 584 | 16.3 |
| LA | 4,468 | 786 | 17.6 |
| MA | 3,239 | 346 | 10.7 |
| MD | 2,225 | 174 | 7.8 |
| ME | 1,208 | 143 | 11.8 |
| MI | 4,260 | 553 | 13.0 |
| MN | 2,007 | 171 | 8.5 |
| MO | 3,190 | 244 | 7.6 |
| MS | 4,737 | 903 | 19.1 |
| MT | 1,152 | 106 | 9.2 |
| ND | 526 | 64 | 12.2 |
| NE | 1,090 | 94 | 8.6 |
| NH | 493 | 56 | 11.4 |
| NJ | 2,650 | 246 | 9.3 |
| NM | 2,554 | 190 | 7.4 |
| NV | 1,627 | 114 | 7.0 |
| NY | 3,559 | 460 | 12.9 |
| OH* | 766 | 192 | 25.1 |
| OK | 2,974 | 371 | 12.5 |
| OR | 4,187 | 263 | 6.3 |
| PA | 5,896 | 737 | 12.5 |
| RI | 694 | 79 | 11.4 |
| SC | 1,900 | 236 | 12.4 |
| SD | 781 | 98 | 12.5 |
| TN | 6,383 | 664 | 10.4 |
| TX | 16,789 | 2,673 | 15.9 |
| UT | 1,447 | 94 | 6.5 |
| VA | 7,062 | 1,117 | 15.8 |
| WI* | 3,395 | 330 | 9.7 |
| WV | 1,682 | 262 | 15.6 |
| Total | 148,461 | 17,097 | 11.5 |

* Data from these states represented less than 60% of the actual population tested.

Table 5
Reasons for Not Completing High School by Retention Status

| Reason for not completing high school | Retainees (N=14,910) % | Nonretainees (N=23,186) % | Uncertain (N=87,082) % |
|---|---|---|---|
| Could not work and study at the same time | 11.6 | 9.0 | 9.8 |
| Poor teaching | 16.9 | 19.4 | 17.8 |
| School did not offer the courses I wanted | 5.9 | 8.8 | 7.5 |
| Not enough vocational/technical courses | 4.0 | 4.4 | 4.1 |
| Teachers did not help me enough | 17.2 | 16.0 | 16.1 |
| School work was too easy | 10.6 | 14.6 | 13.1 |
| Could not adjust to school routine | 16.8 | 15.1 | 15.7 |
| Did not like school | 48.2 | 48.1 | 50.0 |
| Was bored | 42.2 | 42.6 | 43.4 |
| Was needed at home to care for family members | 7.7 | 6.1 | 6.1 |
| Got a job | 17.2 | 16.1 | 15.8 |
| Needed money to help out at home | 7.9 | 6.5 | 6.2 |
| Job took too much time | 6.6 | 5.1 | 5.2 |
| Got married | 6.3 | 5.3 | 5.9 |
| Family moved too often | 8.5 | 7.7 | 7.4 |
| Personal/family illness | 7.4 | 7.8 | 7.5 |
| Got pregnant/made someone pregnant | 10.2 | 8.4 | 8.3 |
| Parents did not support my education | 3.5 | 2.6 | 2.9 |
| Lacked a good place to study at home | 9.6 | 7.8 | 8.4 |
| Did not have enough money to go to school | 2.2 | 1.4 | 1.6 |
| Other family members did not complete high school | 9.3 | 6.3 | 6.7 |
| Had trouble with math | 32.6 | 28.4 | 29.7 |
| Had trouble with reading | 10.0 | 6.1 | 6.7 |
| Poor grades | 36.8 | 28.6 | 32.1 |
| Poor test scores | 22.2 | 16.9 | 18.9 |
| School work was too hard | 8.4 | 4.9 | 5.7 |
| Homework was too hard | 7.1 | 5.3 | 5.7 |
| Poor study habits | 40.2 | 34.3 | 37.6 |
| Had trouble understanding the English language | 3.0 | 1.9 | 2.1 |
| Was absent too many times | 51.0 | 46.9 | 50.9 |
| Too old for my grade | 39.1 | 4.9 | 13.7 |
| Had emotional problems | 18.3 | 18.8 | 19.3 |
| Had problems with alcohol | 9.5 | 7.5 | 7.7 |
| Had problems with drugs | 15.8 | 12.1 | 12.7 |
| Did not feel part of the school | 21.8 | 20.8 | 21.3 |
| Did not feel safe at school | 4.3 | 5.0 | 4.4 |
| Did not get along with other students | 10.0 | 11.1 | 10.0 |
| Did not get along with teachers | 21.3 | 19.7 | 20.3 |
| Had problems with the law/police | 21.0 | 15.8 | 15.7 |
| Social life was more important than school work | 22.4 | 20.3 | 21.8 |
| School official told me to leave | 8.6 | 6.6 | 7.4 |
| Was not happy in school | 37.6 | 42.3 | 42.8 |
| Got suspended/expelled | 20.7 | 16.2 | 16.7 |

suggest that reasons for taking the GED Tests as reported by the retainees are more related to increasing employment opportunity as well as personal confidence, and less focused on further education when compared to reasons indicated by the nonretainees.

Table 6
Reasons for Taking GED® Tests by Retention Status

| Reason for taking the GED® Tests | Retainees (N=16,617) % | Nonretainees (N=28,584) % | Uncertain (N=99,621) % |
|---|---|---|---|
| Education reasons | | | |
| Enroll in technical or trade program | 20.8 | 15.4 | 17.3 |
| Enter 2-year college | 28.2 | 31.1 | 30.7 |
| Enter 4-year college/university | 22.3 | 28.4 | 25.5 |
| Skills certification | 8.4 | 6.5 | 6.6 |
| Job training | 12.4 | 8.1 | 8.9 |
| Any education reason | 60.8 | 64.1 | 62.9 |
| Employment reasons | | | |
| Get first job | 13.9 | 10.9 | 11.1 |
| Keep current job | 2.1 | 1.9 | 1.9 |
| Get a better job | 33.4 | 24.9 | 29.1 |
| Employer requirement | 7.8 | 5.5 | 6.5 |
| Any employment reason | 47.2 | 36.4 | 41.0 |
| Military reasons | | | |
| Military entrance | 11.0 | 7.5 | 9.0 |
| Military career | 5.2 | 3.4 | 4.1 |
| Any military reason | 12.4 | 8.5 | 10.2 |
| Social reasons | | | |
| Early release | 4.4 | 5.4 | 4.5 |
| Court order | 7.0 | 4.7 | 5.3 |
| Public assistance requirement | 0.9 | 0.5 | 0.5 |
| Any social reason | 11.5 | 10.0 | 9.8 |
| Personal reasons | | | |
| Role model for family | 17.3 | 11.7 | 12.9 |
| Personal satisfaction | 48.4 | 41.2 | 44.8 |
| Any personal reason | 51.6 | 43.5 | 47.0 |
| Other reasons for testing | 21.8 | 25.3 | 23.0 |

Table 7 lists the sources from which the GED candidates first learned about the GED Tests. Candidates are allowed to select multiple sources. The most frequently reported source was through a friend, neighbor, or family member; more than 56% of the recent dropouts who took the GED Tests indicated one of these sources. In addition, about half of the candidates in the whole sample indicated that they first learned about GED Tests through a school counselor or teacher. This percentage was even higher among the retainee group, suggesting it is common for schools to refer students who have fallen, or are likely to fall, behind their grade level to the

GED® Tests as an alternative to achieving a regular high school diploma. In addition, 7% of the retainees indicated that they first learned about the GED Tests from a jail or prison official and 9% from a probation or parole officer. These percentages were higher than those reported by the nonretainees (3% and 5% respectively), which is consistent with the higher percentage of retainees who were in correctional facilities when taking the GED Tests (Table 2).

Table 7
Where Candidates First Learned about GED® Tests by Retention Status

| Source | Retainees (N=15,918) % | Nonretainees (N=26,902) % | Uncertain (N=94,679) % |
|---|---|---|---|
| Friend, neighbor, or family member | 56.5 | 56.3 | 57.6 |
| Classmate | 16.2 | 15.0 | 15.7 |
| School counselor or teacher | 52.2 | 49.4 | 50.0 |
| Television | 4.0 | 2.5 | 3.0 |
| Radio | 1.2 | 0.9 | 0.9 |
| Magazine | 1.0 | 0.7 | 0.6 |
| Newspaper | 1.8 | 1.2 | 1.4 |
| Brochure, pamphlet, or poster | 4.3 | 3.5 | 3.5 |
| Employer | 2.2 | 1.8 | 1.9 |
| Employment counselor | 1.0 | 0.6 | 0.7 |
| Education agency | 5.5 | 3.5 | 3.5 |
| Jail or prison official | 6.8 | 3.1 | 3.8 |
| Probation or parole officer | 8.5 | 5.4 | 5.7 |
| Military recruiting officer | 3.2 | 2.5 | 2.9 |
| Social worker | 4.6 | 3.0 | 3.2 |
| Other | 14.2 | 14.2 | 14.0 |

*Summary of the Differences in Characteristics*

In this first section, we examined the demographics, reasons for not completing high school, and reasons for taking the GED Tests for GED candidates who dropped out of school in 2003 or 2004 and took the GED Tests immediately after dropping out. Among the candidates who had been retained in grade, the percentages of males and minorities were disproportionately high. The retained candidates were less likely to be employed and more likely to be in correctional facilities than the nonretained candidates at the time of testing. Most GED candidates who recently dropped out reported that they dropped out of school because they did not like school and were absent too many times. While the nonretainees were equally or even more likely to report they were unhappy (or bored) with the school environment, the retainees were more likely to indicate they dropped out because of academic or behavioral problems. In addition, a large proportion (almost 40%) of the retainees reported that feeling too old for their grade was a reason they left school. About half of the candidates reported that they first learned

about the GED Tests from a friend, neighbor, or family member and/or school personnel. Overall, educational and employment reasons for testing were prevalent among the recent dropouts; however, the retainees were more likely to seek an employment opportunity or promotion as well as personal satisfaction, and less likely to seek higher education as compared to the nonretainees.

*Performance on GED® Tests: Retainees and Nonretainees*

Some researchers have shown initial improvements in student achievement after retention (Butler, 1990; Dworkin et al., 1999; Karweit, 1999; Roderick, Jacob, & Bryk, 2002). However, other studies argued that the initial academic gain for retainees will eventually fade in later years (Holmes, 1989; Jimerson, 2001). This section examines the impact of grade retention on recent high school dropouts via comparing their performance on the GED Tests across retention status. We will focus on three aspects: standard scores, completion and pass rates, and time spent on test preparation.

*GED® Standard Scores.* Tables 8 through 12 present the GED Tests standard scores of recent high school dropouts by retention status and by a series of demographic variables. If a candidate took the test in one content area multiple times during 2003 and 2004, only the score of the first time that the test was taken was included. First-time test scores were chosen instead of best test scores because a candidate's score may increase with the number of times that he takes the test, which is, to a great extent, determined by different testing policies and testing capacities across jurisdictions.

According to Table 8, on average, the nonretainees outperformed the retainees at a statistically significant level ($p < .001$) in every test area when they took the GED Tests for the first time after dropping out of school. Mean standard score differences ranged from 23 points on the Science Test to 35 points on the Mathematics Test. The uncertain group also outperformed the retainees by more than 20 points on every test.

Table 9 displays the mean GED Tests standard scores of recent high school dropouts in each test area, by gender and by retention status. Female candidates in each retention status group outperformed male candidates on the Language Arts, Writing and Language Arts, Reading Tests, but lagged behind on the Social Studies, Science, and Mathematics Tests. When the scores are examined by retention status, in each test area, and for both males and females, the nonretainees outperformed the retainees at a statistically significant level.

Table 10 shows the mean GED Tests standard scores of the recent dropouts by retention status within each ethnicity group. A similar pattern emerged, i.e., on every test, the nonretainees outperformed the retainees substantially, and the performance of the uncertain group was in between, but closer to that of the nonretainees. This pattern was observed for each ethnic group except the Hawaiian or Pacific Islander group. For GED candidates from Hawaii or the Pacific Islands, the nonretainees scored, on average, 9 to 15 points lower than the retainees on the Social Studies, Science, and Language Arts, Reading Tests. However, the Hawaiian or Pacific Islander retainee group consisted of a small number of candidates, with less than 80 examinees in each

Table 8
GED® Tests Standard Scores by Retention Status

| GED® Test | | Retainees | Nonretainees | Uncertain |
|---|---|---|---|---|
| Language Arts, Writing | Mean | 476 | 507 | 498 |
| | Std Dev. | 74 | 86 | 82 |
| | N | 15,532 | 27,322 | 94,490 |
| Social Studies | Mean | 502 | 531 | 525 |
| | Std Dev. | 87 | 90 | 89 |
| | N | 16,313 | 28,234 | 97,744 |
| Science | Mean | 513 | 536 | 534 |
| | Std Dev. | 85 | 87 | 87 |
| | N | 16,334 | 28,226 | 97,704 |
| Language Arts, Reading | Mean | 525 | 558 | 550 |
| | Std Dev. | 102 | 109 | 106 |
| | N | 16,419 | 28,470 | 98,206 |
| Mathematics | Mean | 468 | 503 | 496 |
| | Std Dev. | 85 | 95 | 91 |
| | N | 14,615 | 24,454 | 86,655 |

Note: The differences between mean standard scores for retainees and nonretainees in each test are significant at the 0.001 level.

test area; none of the differences in standard scores between the retainees and nonretainees in this ethnic group was significant at the 0.05 level.

Table 11 lists the mean GED Tests standard scores of the recent high school dropouts by retention status within primary languages spoken at home. Again, nonretainees outperformed retainees at a statistically significant level on every test, regardless of their primary languages. Candidates who speak English as primary language accounted for about 97% of the whole sample. Within this group, nonretainees outperformed retainees by 23 to 35 points in the five test areas. The differences between the performance of nonretainees and retainees who primarily speak French at home were even larger. Although the size of the French speaking group was much smaller compared with other language groups, the differences in standard scores between the retainees and nonretainees in the French-speaking group were all significant at the 0.05 level.

Table 9
GED® Tests Standard Scores by Gender and Retention Status

| Gender/Retention Status | | Language Arts, Writing | | Social Studies | | Science | | Language Arts, Reading | | Mathematics | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean | N | Mean | N | Mean | N | Mean | N | Mean | N |
| Female | Retainees | 485 | 4,599 | 490 | 4,732 | 494 | 4,744 | 533 | 4,840 | 453 | 4,239 |
| | Nonretainees | 519 | 12,326 | 523 | 12,523 | 524 | 12,502 | 568 | 12,693 | 494 | 10,792 |
| | Uncertain | 509 | 35,733 | 515 | 36,404 | 519 | 36,350 | 558 | 36,785 | 483 | 32,211 |
| Male | Retainees | 472 | 10,839 | 507 | 11,488 | 521 | 11,494 | 521 | 11,487 | 475 | 10,302 |
| | Nonretainees | 497 | 14,875 | 536 | 15,591 | 545 | 15,604 | 550 | 15,656 | 510 | 13,550 |
| | Uncertain | 491 | 58,207 | 531 | 60,784 | 543 | 60,810 | 545 | 60,859 | 503 | 54,061 |

Note: The differences of the mean standard scores between the retainees and nonretainees within each gender group in each test are significant at the 0.001 level.

Table 10
GED® Tests Standard Scores by Ethnicity Group and Retention Status

| Ethnicity/Retention Status | | Language Arts, Writing | | Social Studies | | Science | | Language Arts, Reading | | Mathematics | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean | N | Mean | N | Mean | N | Mean | N | Mean | N |
| Hispanic | Retainees | 474 | 2,634 | 492 | 2,799 | 497 | 2,793 | 518 | 2,838 | 456 | 2,519 |
| | Nonretainees | 498 | 4,138 | 515 | 4,309 | 511 | 4,290 | 542 | 4,364 | 483 | 3,680 |
| | Uncertain | 488 | 13,254 | 510 | 13,787 | 511 | 13,746 | 535 | 13,930 | 478 | 12,045 |
| American Indian or Alaska Native | Retainees | 472 | 454 | 504 | 487 | 512 | 488 | 517 | 491 | 464 | 447 |
| | Nonretainees | 491 | 593 | 524 | 629 | 532 | 631 | 552 | 638 | 490 | 594 |
| | Uncertain | 484 | 2,180 | 517 | 2,312 | 529 | 2,300 | 543 | 2,319 | 486 | 2,127 |
| Asian | Retainees | 477 | 204 | 499 | 229 | 502 | 230 | 508 | 230 | 504 | 210 |
| | Nonretainees | 514 | 542 | 526 | 570 | 530 | 568 | 543 | 574 | 542 | 501 |
| | Uncertain | 512 | 1,443 | 536 | 1,515 | 537 | 1,500 | 547 | 1,509 | 529 | 1,352 |
| Black | Retainees | 455 | 3,197 | 464 | 3,393 | 466 | 3,402 | 489 | 3,411 | 427 | 2,969 |
| | Nonretainees | 474 | 3,774 | 481 | 3,922 | 478 | 3,926 | 507 | 3,994 | 447 | 3,331 |
| | Uncertain | 468 | 13,799 | 478 | 14,527 | 477 | 14,506 | 504 | 14,649 | 442 | 12,814 |
| Hawaiian or Pacific Islander | Retainees | 504 | 69 | 526 | 72 | 535 | 73 | 546 | 72 | 480 | 67 |
| | Nonretainees | 507 | 236 | 517 | 240 | 520 | 243 | 536 | 243 | 486 | 209 |
| | Uncertain | 503 | 608 | 525 | 628 | 530 | 626 | 546 | 634 | 500 | 560 |
| White | Retainees | 484 | 8,464 | 518 | 8,801 | 535 | 8,817 | 540 | 8,849 | 487 | 7,877 |
| | Nonretainees | 516 | 17,145 | 546 | 17,629 | 554 | 17,631 | 574 | 17,711 | 520 | 15,230 |
| | Uncertain | 506 | 60,229 | 539 | 61,867 | 552 | 61,915 | 564 | 62,046 | 512 | 54,743 |

Note: Except for the Hawaiian or Pacific Islander group, the differences of the mean standard scores between the retainees and nonretainees within each ethnicity group in each test are significant at the 0.001 level. The differences between the retainees and nonretainees within the Hawaiian or Pacific Islander group are not statistically significant ($p > 0.05$).

Table 11
GED® Tests Standard Scores by Primary Language and Retention Status

| Primary Language/ Retention Status | | Language Arts, Writing | | Social Studies | | Science | | Language Arts, Reading | | Mathematics | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean | N | Mean | N | Mean | N | Mean | N | Mean | N |
| English | Retainees | 477 | 14,420 | 503 | 15,082 | 515 | 15,110 | 527 | 15,175 | 469 | 13,507 |
| | Nonretainees | 508 | 25,046 | 533 | 25,826 | 538 | 25,830 | 561 | 26,033 | 504 | 22,321 |
| | Uncertain | 499 | 88,371 | 526 | 91,264 | 536 | 91,255 | 552 | 91,684 | 497 | 80,875 |
| French | Retainees | 434 | 16 | 410 | 23 | 390 | 23 | 436 | 23 | 410 | 10 |
| | Nonretainees | 475 | 33 | 476 | 35 | 475 | 36 | 495 | 35 | 494 | 24 |
| | Uncertain | 502 | 46 | 477 | 54 | 481 | 53 | 507 | 53 | 485 | 37 |
| Other | Retainees | 463 | 125 | 464 | 153 | 470 | 151 | 471 | 152 | 479 | 138 |
| | Nonretainees | 492 | 319 | 503 | 343 | 503 | 342 | 503 | 344 | 546 | 295 |
| | Uncertain | 484 | 729 | 497 | 812 | 501 | 801 | 503 | 815 | 513 | 698 |
| Spanish | Retainees | 461 | 336 | 468 | 399 | 471 | 393 | 486 | 408 | 436 | 351 |
| | Nonretainees | 470 | 570 | 475 | 636 | 467 | 623 | 494 | 654 | 452 | 508 |
| | Uncertain | 467 | 1,577 | 481 | 1,723 | 481 | 1,710 | 504 | 1,734 | 454 | 1,441 |

Note: The differences of the mean standard scores between the retainees and nonretainees within English, Spanish, and other language-speaking groups in each test and are significant at the 0.001 level. The differences between the retainees and nonretainees within the French-speaking group are significant at the 0.05 level.

*GED® Tests Battery Completion and Pass Rates.* As discussed earlier, a GED® candidate has to complete all five content area tests and meet the minimum standard score and jurisdiction requirements in order to obtain a GED credential. Test completion and pass rates are important performance indicators for different groups of test takers. Because we have two years of test score data on the GED Test takers who dropped out in 2003 or 2004, the completion rate for those who dropped out in 2003 may be different from the rate for those who dropped out in 2004, because, within the dataset used, the 2003 dropouts had two years to complete the tests instead of one. Therefore, the following completion and pass rates are calculated based on those who dropped out in 2003 and completed the GED Tests by the end of 2004. This group (100,292 completers) amounts to about 85% of the total completers (117,774), or more than two thirds of the whole sample (148,461) in this study. Table 12 lists the completion and pass rates of the candidates who dropped out in 2003 and took the GED Tests by the end of 2004 by their retention status.

As shown in Table 12, among the test takers who left school in 2003 and took the GED Tests by the end of 2004, the test completion rate was 2 percentage points higher for the retainee group (80%) than for the nonretainee group (78%), which suggests that the retainees and nonretainees had similarly high motivation for completing the five GED Tests. However, the pass rates, which are obtained by dividing the number of test takers who passed the tests by the number of test takers who completed the tests, differed substantially. The pass rate for the retainee group was only 65%, which is 13 percentage points lower than that for the nonretainee group. Although candidates who were retained in grade had high motivation to complete all of the GED Tests battery, they were less likely than the nonretainees to demonstrate the skills and knowledge required to pass the GED Tests battery.

Table 12
GED® Tests Battery Completion and Pass Rates of Recent High School Dropouts

| Retention status | Total tested (N) | Completed (N) | Completed (%) | Passed (N) | Passed (%) |
|---|---|---|---|---|---|
| Retainees | 10,413 | 8,361 | 80 | 5,449 | 65 |
| Nonretainees | 22,186 | 17,413 | 78 | 13,563 | 78 |
| Uncertain | 67,693 | 54,974 | 81 | 41,520 | 76 |
| All | 100,292 | 80,748 | 81 | 60,532 | 75 |

Note: The differences in the completion rate and pass rates between the retainees and nonretainees are significant at the 0.001 level.

*Time Spent on GED® Test Preparation.* In the demographic survey, candidates are asked about how many hours they spent preparing for the GED Tests. As candidates were not asked about the time they spent preparing for each test area, the survey information was considered as the time candidates spent on preparing for the entire battery. Thus, the use of the battery average

score may be more appropriate when presenting the relationship of test performance and hours spent on test preparation.

The mean battery average standard score was 521 (standard deviation of 75) for the GED candidates who dropped out in 2003 or 2004 and completed all five tests by the end of 2004. This calculation was also based on first-time test scores. Based on the requirement of a minimum total score of 2250, or 450 battery average, to pass the GED Tests, the battery average standard scores were divided into five intervals to better present the relationship between the time that the candidates spent on test preparation and their test performance. The five intervals are: less than 450 (failing), 451-520, 521-590, 591-660, and higher than 660. Table 13 shows the hours the candidates spent on test preparation within retention status by standard score interval. Interestingly, contrary to the assumption that test scores improve with time of preparation, the total hours of preparation decreased from an average of 98 hours for those who did not pass the GED Tests to an average of 26 hours for those who achieved an average GED Tests standard score of higher than 660. However, within the same score interval, retainees spent much more time preparing for the tests, which indicates that, to achieve the same performance level, retainees would have to spend more time preparing for the tests than the nonretainees spend.

Table 13
Hours GED® Test Battery Completers Spent on Test Preparation by Intervals of Average Standard Score Intervals and Retention Status

| Battery average standard score | Retention Status | | | | | | All | |
|---|---|---|---|---|---|---|---|---|
| | Retainees | | Nonretainees | | Uncertain | | All | |
| | Hours of preparation | | Hours of preparation | | Hours of preparation | | Hours of preparation | |
| | Mean | N | Mean | N | Mean | N | Mean | N |
| Less than 450 (failing) | 122 | 2,617 | 88 | 2,283 | 94 | 9,920 | 98 | 14,820 |
| 450 to 520 | 93 | 4,572 | 69 | 5,990 | 70 | 23,879 | 73 | 34,441 |
| 521 to 590 | 67 | 2,847 | 50 | 5,647 | 48 | 20,749 | 50 | 29,243 |
| 591 to 660 | 44 | 955 | 33 | 2,949 | 34 | 9,306 | 35 | 13,210 |
| Higher than 660 | 38 | 245 | 26 | 1,071 | 25 | 3,003 | 26 | 4,319 |

Note: The differences in mean hours of preparation between the retainees and nonretainees in intervals less than or equal to 660 are significant at the 0.001 level; the difference between the retainees and nonretainees for those scoring higher than 660 is not statistically significant ($p > 0.05$).

The above observation suggests that those who spent the greatest number of hours preparing for the tests are mostly high school dropouts with lower academic knowledge and cognitive skills and thus lower preparedness and/or confidence in passing the tests. The

retainees, as a group that have lower cognitive skills, had spent a greater number of hours of preparation in order to score at the same level as the nonretainees did.

*Regression Analyses.* Based on the previous analyses, there is a strong association between whether a candidate had been retained in grade and his or her individual GED Test scores and the probability of passing the GED Tests battery. In this section, we will further examine whether such relationship still exists between retained or unretained candidates by controlling for different demographic characteristics using multivariate regression analyses.

Table 14 lists the results of six ordinary least squares regressions: average GED Tests battery score and each of the five content area GED Test scores on retention status, gender, ethnicity, primary language, and highest grade completed. For each model, the overall *F* statistic was significant at the .001 level indicating at least one of the five independent variables' coefficients was not zero. The R-Square, or amount of variation in the score serving as the dependent variable explained by variation in the independent variables in the models, ranged from .07 for the Language Arts, Writing Test, to .14 for the Science Test, indicating that retention status, gender, ethnicity, primary language, and highest grade completed accounted for 7 to 14% of the variation in test scores. For each of the six models, all independent variable coefficients were significant at the 0.005 level, indicating that each variable in the model contributed to a statistically significant amount of variation in the score serving as the dependent variable. Standardized coefficients, indicating the change in test score associated with a standard deviation change in independent variable, holding constant all other variables, was consistently negative for retention status, and ranged up to .30 for ethnicity. Results showed that after controlling for demographic differences, retained candidates are likely to score 11 to 25 points lower on the five content area tests and 16 points lower on the average battery score, than the unretained candidates. In addition, for every additional grade that candidates completed before taking the GED Tests, they achieved, on average, 7 points higher than nonretainees.

The GEDTS demographic survey also asks the candidates to indicate the total years of study they have completed from the 9$^{th}$ grade until they completed schooling in English literature, English composition, social studies, science, mathematics, as well as their average grades in each of those subject area. Response rates for these questions range from only 47% to 63%. It was believed that the years of taking these courses combined with the average grades would be a better predictor for the candidates' previous academic capacities and for their GED Test performance. Therefore, a variable (grade x years of schooling) was created and calculated as the product of the average reported grade and number of years of taking that course.

The next set of regression analyses replaced the variable indicating highest grade completed with the newly created variable *grade x years of schooling*. Table 15 lists the results of these additional six ordinary least squares regressions: average GED Tests battery score and each of the five content area GED Test scores on retention status, gender, ethnicity, primary language, and the variable *grade x years of schooling*. Again, for each model, the overall *F* statistic was significant was significant at the .001 level indicating at least one of the five independent variables' coefficients was not zero. The R-Square, or amount of variation in the score serving as the dependent variable explained by variation in the independent variables in the

models, ranged from .10 for the Language Arts, Reading Test, to .17 for the battery score, indicating that retention status, gender, ethnicity, primary language, and highest grade completed accounted for 10 to 17% of the variation in test scores. For each of the six models, all independent variable coefficients except one (significant at $p < .09$) were significant at the 0.005 level, indicating that each variable in the model contributed to a statistically significant amount of variation in the score serving as the dependent variable. Standardized coefficients, indicating the change in test score associated with a standard deviation change in independent variable, holding constant all other variables, was again consistently negative for retention status, and ranged up to .30 for ethnicity. The variable *grade x years of schooling* had an effect nearly equal to or greater than ethnicity for four of the six models (exceptions being those modeling the Social Studies and Science Test scores). Results showed that after controlling for demographic differences, retained candidates are likely to score 15 to 21 points lower on the five content area tests and 14 points lower on the average battery score, than the unretained candidates.

Results presented earlier in this paper showed that the pass rate of the retained candidates is considerably lower than that of the unretained candidates. A logistic regression model was used to estimate the odds ratio of the retainees' probability of passing the GED Tests battery versus the nonretainees. A dummy variable that indicates if the candidates dropped out of school in 2003 (which equals 1) was included in the model, because if a candidate dropped out in 2003, he or she would have had more time to prepare for the tests before the end of 2004 than those who dropped out of school in 2004. Table 16 lists the results of the logistic regression modeling. It shows that, keeping other demographic variables constant, the odds a retained candidate passing the GED Tests battery is only .81 of that of an unretained candidate. This model correctly predicts a candidate passing the GED Tests battery 63% of the time.

Table 14
Regression of GED® Test Scores on Retention Status, Demographic Variables, and Highest Grade Completed

| | *B* | *SE B* | β |
|---|---|---|---|
| | Average Battery (N = 31,645, $R^2$ = .12) | | |
| Intercept | 412.48 | 5.35 | .00 |
| Retained (yes=1, no=0) | -16.40 | 1.10 | -.11 |
| Gender (male=1, female=0) | 4.73 | 0.83 | .03 |
| Ethnicity (white=1, minority=0) | 41.19 | 0.86 | .26 |
| Primary language (English=1, non-English=0) | 11.60 | 2.37 | .03 |
| Highest grade completed | 7.04 | 0.43 | .11 |
| | Language Arts, Writing (N=37,579, $R^2$ = .07) | | |
| Intercept | 430.13 | 5.47 | .00 |
| Retained (yes=1, no=0) | -17.64 | 1.14 | -.10 |
| Gender (male=1, female=0) | -18.70 | 0.85 | -.11 |
| Ethnicity (white=1, minority=0) | 24.25 | 0.88 | .14 |
| Primary language (English=1, non-English=0) | 12.71 | 2.37 | .03 |
| Highest grade completed | 5.46 | 0.44 | .08 |
| | Social Studies (N = 39,070, $R^2$ = .10) | | |
| Intercept | 381.82 | 5.71 | .00 |
| Retained (yes=1, no=0) | -14.18 | 1.19 | -. 08 |
| Gender (male=1, female=0) | 13.90 | 0.90 | .08 |
| Ethnicity (white=1, minority=0) | 43.86 | 0.92 | .24 |
| Primary language (English=1, non-English=0) | 21.63 | 2.39 | .04 |
| Highest grade completed | 8.47 | 0.46 | .12 |
| | Science (N = 39,077, $R^2$ = .14) | | |
| Intercept | 396.35 | 5.36 | .00 |
| Retained (yes=1, no=0) | -11.74 | 1.12 | -.07 |
| Gender (male=1, female=0) | 22.62 | 0.85 | .13 |
| Ethnicity (white=1, minority=0) | 54.52 | 0.87 | .30 |
| Primary language (English=1, non-English=0) | 24.44 | 2.26 | .05 |
| Highest grade completed | 6.23 | 0.43 | .09 |
| | Language Arts, Reading (N=39,381, $R^2$ = .08) | | |
| Intercept | 443.97 | 6.85 | .00 |
| Retained (yes=1, no=0) | -19.23 | 1.44 | -.09 |
| Gender (male=1, female=0) | -16.84 | 1.08 | -.08 |
| Ethnicity (white=1, minority=0) | 41.94 | 1.11 | .19 |
| Primary language (English=1, non-English=0) | 34.52 | 2.86 | .06 |
| Highest grade completed | 5.90 | 0.56 | .07 |
| | Mathematics (N = 33,949, $R^2$ =.11) | | |
| Intercept | 410.72 | 6.30 | .00 |
| Retained (yes=1, no=0) | -25.68 | 1.31 | -.13 |
| Gender (male=1, female=0) | 17.88 | 0.99 | .09 |
| Ethnicity (white=1, minority=0) | 49.31 | 1.02 | .26 |
| Primary language (English=1, non-English=0) | -7.73 | 2.70 | -.02 |
| Highest grade completed | 5.37 | 0.51 | .07 |

Note: All coefficient estimates are significant at $p < 0.005$.

Table 15
Regression of GED® Test Scores on Retention Status, Demographic Variables, and Grade x Years of Schooling in Subject Area

| | *B* | *SE B* | β |
|---|---|---|---|
| | Average Battery (N = 17,884, $R^2$ = .17) | | |
| Intercept | 445.26 | 3.32 | .00 |
| Retained (yes=1, no=0) | -14.34 | 1.20 | -.09 |
| Gender (male=1, female=0) | 6.95 | 1.09 | .04 |
| Ethnicity (white=1, minority=0) | 42.61 | 1.13 | .26 |
| Primary language (English=1, non-English=0) | 10.58 | 3.03 | .02 |
| Grade x years of schooling (all areas) | 7.06 | 0.20 | .26 |
| | Language Arts, Writing (N=23,697, $R^2$ = .11) | | |
| Intercept | 462.51 | 3.11 | .00 |
| Retained (yes=1, no=0) | -16.51 | 1.56 | -.09 |
| Gender (male=1, female=0) | -15.33 | 1.09 | -.09 |
| Ethnicity (white=1, minority=0) | 26.04 | 1.11 | .15 |
| Primary language (English=1, non-English=0) | 9.21 | 2.98 | .02 |
| Grade x years of schooling (English comp.) | 5.07 | 0.16 | .21 |
| | Social Studies (N = 29,752, $R^2$ = .13) | | |
| Intercept | 445.70 | 2.82 | .00 |
| Retained (yes=1, no=0) | -18.37 | 1.08 | -.10 |
| Gender (male=1, female=0) | 15.86 | 1.01 | .09 |
| Ethnicity (white=1, minority=0) | 44.61 | 1.05 | .24 |
| Primary language (English=1, non-English=0) | 19.68 | 2.67 | .04 |
| Grade x years of schooling (social studies) | 4.80 | 0.14 | .19 |
| | Science (N = 29,990, $R^2$ = .16) | | |
| Intercept | 442.46 | 2.63 | .00 |
| Retained (yes=1, no=0) | -14.52 | 1.02 | -.08 |
| Gender (male=1, female=0) | 23.78 | 0.95 | .13 |
| Ethnicity (white=1, minority=0) | 54.78 | 0.98 | .30 |
| Primary language (English=1, non-English=0) | 23.53 | 2.49 | .05 |
| Grade x years of schooling (science) | 3.80 | 0.14 | .15 |
| | Language Arts, Reading (N=30,406, $R^2$ = .10) | | |
| Intercept | 465.93 | 3.44 | .00 |
| Retained (yes=1, no=0) | -16.71 | 1.31 | -.07 |
| Gender (male=1, female=0) | -9.61 | 1.23 | -.04 |
| Ethnicity (white=1, minority=0) | 43.27 | 1.25 | .19 |
| Primary language (English=1, non-English=0) | 35.19 | 3.19 | .06 |
| Grade x years of schooling (English literature) | 5.74 | 0.18 | .18 |
| | Mathematics (N = 26,131, $R^2$ =.16) | | |
| Intercept | 425.69 | 3.05 | .00 |
| Retained (yes=1, no=0) | -21.08 | 1.18 | -.11 |
| Gender (male=1, female=0) | 19.62 | 1.11 | .10 |
| Ethnicity (white=1, minority=0) | 49.95 | 1.14 | .26 |
| Primary language (English=1, non-English=0) | -4.83* | 2.86 | -.01 |
| Grade x years of schooling (mathematics) | 6.65 | 0.15 | .25 |

Note: All coefficient estimates are significant at $p < .005$ except *, where $p = 0.09$.

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Table 16

Results of Logistic Regression for Passing the GED® Tests Battery (Candidates Who Dropped out of School in 2003 and 2004, N = 22,363)

| Parameter | Parameter estimate | Standard error | Odds ratio | *p* |
|---|---|---|---|---|
| Intercept | -0.87 | 0.09 | | <.0001 |
| Retained (yes=1, no=0) | -0.22 | 0.03 | .81 | <.0001 |
| Gender (male=1, female=0) | 0.05 | 0.03 | 1.06 | 0.0617 |
| Ethnicity (white=1, minority=0) | 0.74 | 0.03 | 2.10 | <.0001 |
| Primary language (English=1, non-English=0) | 0.38 | 0.07 | 1.46 | <.0001 |
| Grade x Years of Schooling | 0.08 | <0.01 | 1.09 | <.0001 |
| Dropped out in 2003 | 0.08 | 0.03 | 1.08 | 0.0107 |

Note: Percent Concordant = 63.1.

*Summary of Performance on the GED® Tests.* This study reviewed the GED Test performance of candidates who dropped out in 2003 or 2004 and took one or more tests by the end of 2004 through three aspects: standard scores in each test area, completion and pass rates, and time spent on test preparation. We found that, except in the small group of Hawaiian or Pacific Islander examinees, nonretainees of each gender, ethnicity, and primary language group outperformed the retainees in each test content area as measured by GED Tests standard scores. Although the retained candidates completed the GED Tests battery at the same rate as nonretainees, they were less likely than the nonretainees to demonstrate the skills and knowledge required to pass the GED Tests battery. These differences in GED Test scores and probability of passing the test battery between the retained and not-retained candidates are statistically significant even after controlling for demographic differences. In addition, test takers with lower academic knowledge and cognitive skills, as demonstrated by average battery standard scores, spent more time preparing for the tests. To achieve the same score level, the retainees spent much longer time preparing than the nonretainees did.

## Policy Implication

Numerous studies have shown that grade retention negatively affects students academically and behaviorally and greatly increases the probability of a student's dropping out of school in later years. This study, through a unique population of recent high school dropouts who took the GED Tests, found that even among high school dropouts who sought an alternative to the traditional diploma, those who had been retained in grade demonstrated lower academic achievement than those who had not been retained. Consistent with previous studies on the demographics of retained students, among the recent dropouts who took the GED Tests, retained students were disproportionately male and from ethnic minorities. To achieve the same level of

GED Test scores earned by the nonretainees, the retainees spent more hours preparing for the tests. This empirical study adds to the richness of retention and dropout studies through a unique population and research method. Based on all the effects grade retention has on students, now is a good time to reexamine our nation's retention policies and explore the alternatives.

References

Alexander, K., Entwistle, D., & Dauber, S. (2003). *On the success of failure* (2nd ed.). New York: Cambridge University Press.

Allington, R. L., McGill-Franzen, A. M., & Schick, R. (1997). How administrators understand learning difficulties: A qualitative analysis. *Remedial and Special Education*, *18*(3), 223-232.

American Council on Education (2002). *Tests of General Educational Development*. Washington, DC: American Council on Education.

American Council on Education (2006). *Who Passed the GED® Tests? 2005 Statistical Report*. Washington, DC: American Council on Education.

Bali, V. A., Anagnostopoulos, D., & Roberts R. (2005). Toward a political explanation of grade retention. *Educational Evaluation and Policy Analysis*, *27*(2), 133-149.

Bianchi, S. (1984). Children's progress through school: A research note. *Sociology of Education*, *57*, 184-192.

Butler, J. M., & Handley, H. M. (1990). *Effects of retention on achievement and self-concept of kindergarten and first grade students* (ERIC No. ED327287). Mississippi: ERIC.

Chase, B. (1997). Restoring the impulse to dream: The right to a quality public education. *Vital Speeches of the Day*, *64*, 20-22.

Corman, H. (2003). The effects of state policies, individual characteristics, family characteristics, and neighborhood characteristics on grade repetition in the United States. *Economics of Education Review*, *22*, 409-420.

Dawson, P. (1998). A reassessment of the effects of retention in the primary grades [Review of the book *On the Success of Failure*]. *NASP Communique*, *26*, 20-21.

Dworkin, A. G., Lorence, L., Toenjes, L. A., Hill, A., Perez, N., & Thomas, M. (1999). *Elementary school retention and social promotion in Texas: An assessment of students who failed the reading section of the TAAS*. Houston, TX: Sociology of Education Research Group, University of Houston.

Eide, E. R., & Showalter, M. H. (2001). The effect of grade retention on educational and labor market outcomes. *Economics of Education Review*, *20*, 563-576.

Holmes, T. C. (1989). Grade level retention effects: A meta-analysis of research studies. In L. A. Shepard & M. L. Smith (Eds.), *Flunking grades: Research and policies on retention* (pp. 16-33). New York: Palmer Press.

Jimerson, S. R. (2001). Meta-analysis of grade retention research: Implications for practice in the 21st century. *School Psychology Review*, *30*, 420-437.

Jimerson, S. R., Anderson, G. E., & Whipple, A. D. (2002). Winning the battle and losing the war: Examining the relation between grade retention and dropping out of high school. *Psychology in the Schools*, *39*(4), 441-457.

Karweit, N. (1999). Retention policy. In M. Alkin (Ed.), *Encyclopedia of educational research* (pp. 1114-1118). New York: Macmillan.

Mantzicopoulos, P., & Morrison, D. (1992). Kindergarten retention: Academic and behavioral outcomes through the end of second grade. *American Educational Research Journal, 29*, 182-198.

Roderick, M., Jacob, B., & Bryk, A. (2002). The impact of high-stakes testing in Chicago on student achievement in promotional gate grades. *Educational Evaluation and Policy Analysis*, *24*, 333-357.

Shepard, L., Smith, M., & Marion, S. (1996). Failed evidence on grade retention. *Psychology in Schools*, *33*, 251-261.

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